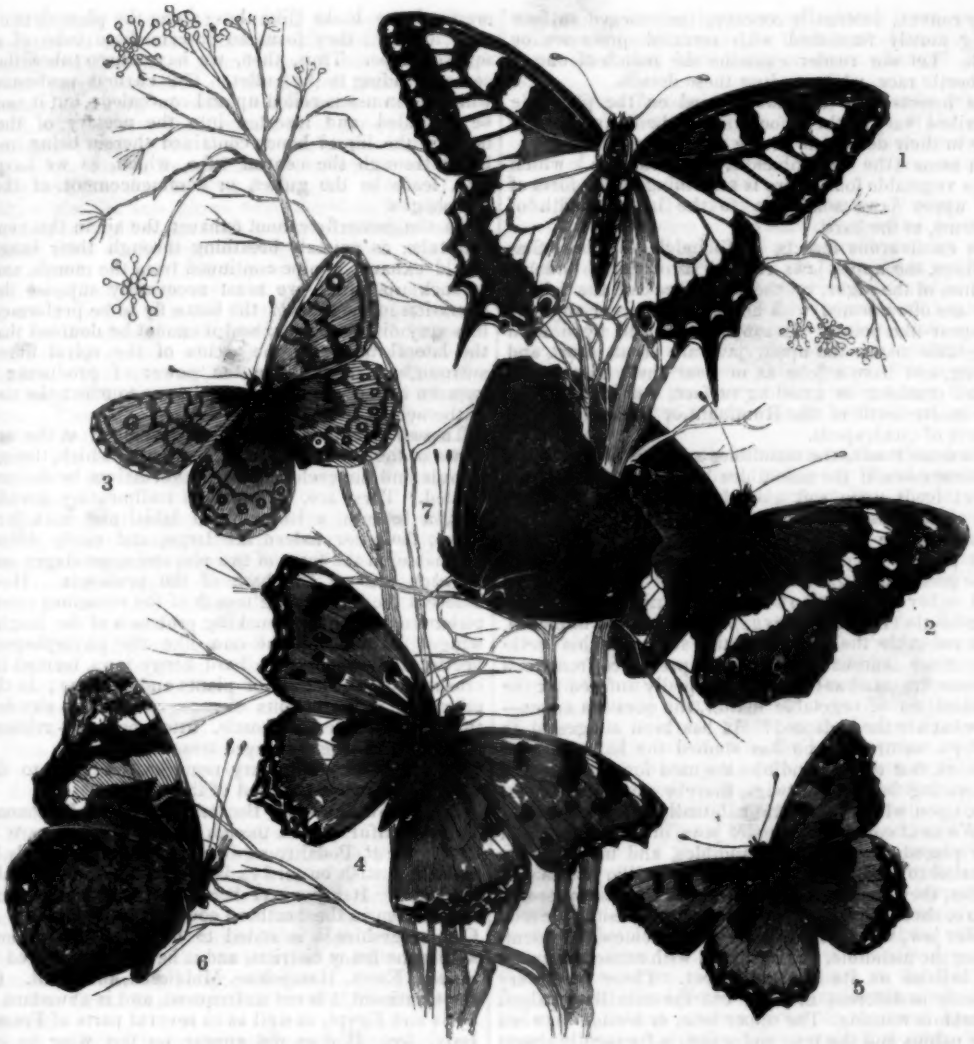

[1, Papilio Machaon; 2, Apatura Iris; 3, Hipparchia Megera; 4, Vanessa Polychloros; 5, Vanessa Urticæ; 6, Vanessa Atalanta; 7, Vanessa Io.]

CURIOSITIES OF BRITISH NATURAL HISTORY.

Butterflies.—No. II.

In our previous notice of the present group of insects we ventured upon a few observations relative to their caterpillar condition, and the changes through which they pass in their progress from the egg to a state of maturity. We may not unappropriately follow out the subject by adverting to some points of interest in the organization of the perfect butterfly. We need scarcely say that, according to the nature of their food, the structure of the mouth is expressly modified. No one can fail to observe the great difference between the mouth of the Beetle and the Butterfly: in the former the mouth is *mandibulate*, that is, formed for gnawing and seizing; in the latter it is *haustellate*, converted into a proboscis for suction. Yet in both, it would appear that the same constituent parts exist, varied as they may be in shape and use.

In order to render the subject clear, let us first explain the parts of a mandibulate mouth, which, as we have observed, is formed for mastication and seizing. It consists of a *labrum*, or upper lip; a *labium*, or under lip; two *mandibles*, or jaws; two *maxillæ*, or under jaws; and a *tongue*. To the maxillæ, or under jaws, are attached a pair of feelers called maxillary *palpi*; and a similar are also attached to the labium, or under lip, and called labial *palpi*. Each of the parts enumerated requires further explanation. The labrum, or upper lip, is usually a movable organ terminating the face, so to speak, anteriorly, and its use appears to be to keep the food in its proper place during the action of the mandibles upon it. The labium, or lower lip, is opposed to the upper lip and serves a similar purpose; acting conjointly with it. The labial palpi have usually two joints, exclusive of their basal attachment, and therefore consist of three portions, like the finger; they serve as feelers of the food. Between the upper and under lip are the two pairs of jaws, acting horizontally; namely, the mandibles and maxillæ. The upper, or mandibles, are used for manducation. When viewed from above or beneath, they generally present a figure more or less approaching to a triangle, but are exter-

nally convex, internally concave, the concave surface being mostly furnished with serrated processes or teeth. Let our reader examine the mouth of one of the beetle race, while reading these details.

As insects with the jaws formed on the principle described vary in their food, so do these upper jaws vary in their details, as do the teeth of quadrupeds.

In some (the Cerambicidæ, Tenebrio, &c.) which gnaw vegetable food, there is something in the form of the upper jaws analogous to the incisor teeth of Rodents, as the hare.

In carnivorous insects, as Cicindela, Carabus, Staphilinus, the upper jaws remind us of the formidable canines of the tiger, or the sharp beak of the falcon, and are often armed with acute serrations or an array of spear-like points. In some which feed upon hard vegetable matter the upper jaws are stout, short, and strong, and have a lobe at or near their base, and a broad crushing or grinding surface, reminding us of the molar teeth of the Ruminant or Pachydermatous orders of quadrupeds.

In some insects the mandibles are destitute of teeth; in these cases, if the mandibles be long and sharp, the insect feeds upon soft animal substances, as worms; but sometimes this sort of jaw is furnished with a minute orifice near the apex, and in this case the insect pierces its prey, and sucks the juices through a tube perforating the mandible itself.

Another modification is seen in the upper jaws of the stag-beetle (Lucanus Cervus). The jaws are immense, and resemble the antlers of the stag. As this beetle is not carnivorous (as might be presumed from such a structure), and as the jaws are equally unfitted for the mastication of vegetable matter, the question arises—to what are they adapted? It has been suggested to us by a naturalist who has studied the habits of this species, that these mandibles are used for piercing and lacerating leaves and twigs, thereby causing a flow of sap, upon which the beetle habitually feeds.

We next come to the under jaws, or maxillæ, which are placed beneath the mandibles, and move nearly parallel to them. Exclusive of the maxillary palpus, or feeler, they consist each of an upper lobe composed of two or three joints, and a lower lobe or division, the true under jaw, which is generally sharp, somewhat resembling the mandible, but furnished with numerous spires or bristles on its internal aspect. These parts vary greatly in different groups; but the maxillary palpus is seldom wanting. The upper lobe, or section between the palpus and the true under jaw, is frequently absent or rudimentary. The under jaws appear to be used principally for turning the food about while the mandibles are at work upon it.

The tongue (lingua) is situated within the labium, or under lip, and sometimes emerges from it; in many cases it constitutes an organ for collecting food, which it transmits to the gullet. In these instances it is peculiarly modified and developed.

So far have we described a mandibulate mouth, as we find it in beetles; but let us turn to the haustellate mouth of the butterfly, and great will be our astonishment at the difference.

In this reveller among flowers, the honey of which it sucks from the nectary, the maxillæ, or lower jaws, are most wonderfully modified—they are no longer hard pincers, but form slender elongated tubes, and together constitute a long slender proboscis, resembling the fine tendril of a vine. Each maxilla is lengthened into a long annulated cartilaginous filament, governed by two layers of spiral muscular fibres, and is moreover hollowed longitudinally. The sides which oppose each other are channelled like a split reed, so that when the edges of each tubular filament are put together, and interlocked by means of a multitude of most minute barbs (like those along the plumelets of of a feather), they form an intermediate tube of a square shape. Thus, then, we have three tubes, the central leading to the gullet. This curious proboscis when not in use is coiled up and concealed; but it can be unfolded, and inserted into the nectary of the flowers, the liquid honey contained therein being imbibed through the central tube, which, as we have said, leads to the gullet, or commencement of the œsophagus.

As the butterfly cannot exhaust the air in this central tube, as animals breathing through their lungs would exhaust a pipe continued from the mouth, and so suck up liquid, we must necessarily suppose the operation in the case of the butterfly to be performed in a very different way; and it cannot be doubted that the lateral tubes, by the action of the spiral fibres surrounding them, have the power of producing a vacuum in the middle passage, so as to effect the rise of the nectar.

These filamentous maxillæ are developed at the expense of the other parts of the mouth, which, though minute and undeveloped, may nevertheless be demonstrated. These are, more or less rudimentary, mandibles, a labrum, a labium, and labial and maxillary palpi; the latter indeed are large, and easily distinguishable, in the form of two plumose appendages, one on each side of the base of the proboscis. How different the leaf-cutting mouth of the voracious caterpillar from the nectar-sucking proboscis of the bright-winged butterfly. The one, like the phytophagous beetle, is furnished with hard horny jaws, formed for crushing the substance of plants and herbage; in the other, by a marvellous change, we find a slender, tubular, elongated proboscis, fitted only for robbing the flowers of their honeyed treasures.

From these preliminary remarks, we pass to the species figured at the head of this article.

1. The Swallow-tail Butterfly (Papilio Machaon). This beautiful species, though by no means so rare as its ally the P. Podalirius (which indeed can scarcely be called a British butterfly), is yet by no means generally abundant. It has never been observed in Scotland, and seldom in the northern counties of England. In Cambridgeshire it is stated to be tolerably common within the fenny districts, and it has been observed in Sussex, Essex, Hampshire, Middlesex, and Kent. On the Continent it is not unfrequent, and is abundant in Syria and Egypt, as well as in several parts of France, Italy, &c. It does not appear on the wing in our island till the beginning of June. We believe that it has not hitherto been noticed in Ireland.

Of all our indigenous butterflies this is the largest; the female, which, as usual, exceeds the male in size, not unfrequently measuring three inches and a half in expanse of wings. Its flight is powerful. The general colour of the wings is black, powdered with yellow, and relieved by bold yellow markings, which colour indeed is spread over the basal half of the hinder wings. From the posterior margin of these projects an acute slip, which may be compared to the outer tail-feathers of the swallow, and at each inner corner is an ocellated spot of red, with an anterior crescent of light blue; the whole nearly surrounded by a ring of black. The body is black, covered with yellow hairs, which form a conspicuous line on each side of the thorax. The caterpillar is of moderate size, smooth, of a greenish colour, each segment being banded with a black line spotted with red. Umbelliferous plants, as fennel, carrot, &c., constitute its food; in some districts in France where it is abundant, it is notorious for the ravages it makes on the latter vegetable.

2. The Purple Emperor, or Highflyer (Apatura Iris).

It is only in the oak-woods of the more southern counties of our island that this splendid butterfly appears, and that not in abundance; it has been styled "the purple emperor of the British oak;" and if beauty, strength of wing, fearlessness, and a lofty, bold, and vigorous flight entitle it to pre-eminence, it certainly stands at the head of our native butterflies. It seldom makes its appearance before the month of July, and may then be seen during the middle of the day, while the sun glows with meridian effulgence, soaring on rapid wings high over the summits of the tallest oaks, on the topmost twigs of which it settles for repose towards the approach of evening. No species of butterfly is captured with so much difficulty (a net at the end of a rod thirty feet long being necessary for the chase), unless indeed it should chance to settle on the ground, when it permits the closest approach. This, however, is a rare occurrence; on the contrary, it often mounts beyond the power of eyesight. This account refers more particularly to the males, for the females are far more rarely seen on the wing, but keep to the tops of the oaks, and consequently are far less frequently captured than the other sex.

The wings of this species are firm in texture; their general colour above is dark brown, changing in certain lights into rich purplish blue of metallic lustre, and relieved by marks of white. On the hinder wings near the inner angle is a small black spot surrounded by red; under surface of wings rust brown, varied with white and black; an ocellated spot on both. The caterpillar is pale green, with horns reddish at the tip. It feeds on the oak, willow, and ash.

3. The Orange Argus, or Wall Butterfly (Hipparchia Megæra).

This butterfly is by no means uncommon, and is very generally spread, appearing from May to August; it flits lightly and rapidly from one resting-place to another, expanding its wings to the sun.

The fore-wings are orange-yellow, inclining to brown, marbled and banded along the edges with dark brown. Near the outer angle an ocellated spot of white with a black ring. Hinder wings with a row of spots, from three to five in number, in a crescentic line near the outer margin; the edge banded with brown. The caterpillar is hairy, of a light green, a whitish line running along each side.

4. The Great Tortoiseshell Butterfly (Vanessa polychloros).

It is principally in the southern counties of our island that this butterfly makes its appearance, and usually about the middle of July. On the Continent it is common, more particularly in the more southern districts. It is rapid on the wing, and often settles on dry pathways and the trunks of trees, delighting in the fervent rays of the sun. The wings are angulated, and often measure upwards of two inches and a half in extent; their colour above is dark orange-red, with a narrow vandyked edging of blue, and a second of black; the fore-wings are marked anteriorly with abbreviated bands of black, and spots of the same colour about the centre; the hinder wings have a large spot of black near the middle of the anterior margin. On the under side the basal half of the wings is dark brown, the remainder yellowish grey finely marked with undulating lines of brown, and an obscure row of bluish crescents towards the tip. On the anterior wings three pale spots are observable near the fore-margin, and one near the middle of the hinder pair.

The caterpillar of this species is gregarious, spiny, and of a brownish tint, with a lateral stripe of orange; the spines are slightly branched and yellowish. Collected in groups, the caterpillars weave webs, while very young, in the branches of various trees, as the willow, elm, and cherry, for their protection, but disperse after they have once or twice changed their skin.

The Great Tortoiseshell Butterfly is closely related to the Small Tortoiseshell (V. Urticæ), one of the most common of our British species, and of which the caterpillar, of a blackish colour, with yellow stripes, is found in abundance on the nettle.

5. The Small Tortoiseshell Butterfly (Vanessa Urticæ). A description of this butterfly, to which we have just alluded, and which is so common and so well known, is scarcely necessary. It is abundant not only in England, but on the adjoining continent, and is conspicuous for its beauty and the lightness with which it flits from flower to flower. Two broods occur every year—one early in spring, the other in autumn. It closely resembles the preceding species, but is much smaller, and has the base of the hinder wings black. Every nettle-bed abounds with its caterpillars, which are spiny.

In Italy this butterfly continues on the wing during the winter, in fine weather; and in our island numbers, as it would appear, pass that season in a torpid condition, issuing from their retreats in February or March, when the sun breaks forth cheerfully, soon perhaps to be be-clouded. Hence the expression of Linnæus respecting this species—"fallax veris indicium" (a deceitful harbinger of spring).

6. The Red Admiral (Vanessa Atalanta). Beautiful is this butterfly, with its velvet-black wings broadly banded with red, and relieved by white and blue. In all parts of our island it is very common, as well as over Europe, and the districts of Africa bordering the Mediterranean: it is also found in the United States of America. This insect, says the clever writer of the 'Journal of a Naturalist,' rarely "appears until late in September, and then so fresh and perfect in its plumage as to manifest its recent production from the chrysalis. In some years they abound, and one may see twenty of these beautiful creatures expanding and closing their brilliant wings under the fruit-trees on our walls, or basking on the disc of some autumnal flower." "Many of our butterflies are produced by successive batches supplying the places of those which have been destroyed, and here it is difficult to mark the duration of an individual; others, as the Nettle, Peacock, and Wood-Tortoise, in many instances survive the winter hidden in some recess or sheltered apartment, appearing in spring-time worn and shabby. But V. Atalanta appears only in the autumn, not as a preserved creature, but as a recent production; and hence we can ascertain the duration of its life to be comprised only within the period of September to the end of October; by which time its food in our gardens has disappeared. Some sheltered wall garnished with the bloom of ivy may prolong its existence a little longer, but the cold and dampness of the season soon destroy it, and hence is the life of this creature, the most beautiful of our lepidopterous tribes, of very brief duration.

The caterpillar of the red admiral (or Admirable of some writers) is solitary, spinous, and greenish, with a lateral line of yellow spots. It feeds on the nettle, and draws the leaf close round it to protect it both from the weather and the ichneumon fly: when the leaf is exhausted, it changes its skin, shifts to another, and webs that together as before. When it has grown so large that one leaf will not cover and feed it, it creeps to the top of the nettle, webbing up the leaves, within which it lies feeding till the time for assuming the chrysalis state draws nigh. In August it fastens itself by the tail within the web under the nettle-tops, changes to a chrysalis, and in fourteen days emerges a perfect

butterfly, known by the broad scarlet band across the anterior wings, and the broad red border of the hinder wings.

7. The Peacock's-Eye (Vanessa Io). The colour of this well-known species is deep brownish red inclining to purple, with a large eyelike spot on each wing above: beneath (as in the figure) the wings are dark shining brown, traversed by fine undulating lines of black.

In the south and midland counties of England this beautiful species is very common, but it is more rare in the north, and seldom seen in Scotland. It usually appears in July, flitting about hedgerows, along shaded lanes, and about the borders of copses, alighting every now and then to sun its wings, and again starting off on its aërial excursion. The caterpillars are found on the nettle, and are gregarious; they are beset with spines, and are of a black colour with white spots, and the hinder legs ferruginous. They enclose themselves in a web, drawing the leaves close around them, and having changed their skin, remove to another quarter, and again form a new domicile; and so on till nearly ready to assume the chrysalis state; they then forsake the web, and feed separately: the chrysalis is greenish yellow, with ten dents, and bifid behind. In about three weeks the butterfly issues forth, disporting amidst the flowers of our meads and woodlands.

[Procession of Freemasons' Orphans at Freemasons' Hall.—From Stothard.]

ANCIENT AND MODERN CHARITIES.

THERE are some curious matters connected with charitable bequests which are deserving of notice, in some cases for the oddness of the bequest itself, and in others as illustrative of ancient manners or customs, or as explanatory of obsolete or local appellations. We shall mention a few of these; but it may be previously worth while to state, that, according to the last Report of the Charity Commissioners, the present amount of income arising from charities in England and Wales is 1,209,395*l*., a large sum, the greater part of which is applied to the endowment of almshouses for the lodging and maintenance of the aged or infirm poor, or for stated distributions of money, clothing, or food to those who are in want of such assistance in particular districts. The income arising from bequests for purposes of education amounts to 312,544*l*., of which the income of endowed grammar-schools is 152,047*l*., of schools not classical 141,385*l*., and of bequests for general purposes of education 19,112*l*. In addition to the above sums, the amount raised for somewhat similar purposes by voluntary contribution is very large. In London alone, the establishments for the education and support of orphan children, one of the most unexceptionable forms of benevolence, are very numerous, but frequently assume an air of exclusiveness that is more curious than really objectionable Thus we have institutions for the orphans of Clergymen, for those of natives of Wiltshire, Westmoreland, Yorkshire, and perhaps some other counties, for those of bakers, publicans, &c., and for those of Freemasons, of which the exhibition of the children at the annual dinner is represented above.

Some bequests made for the advantage of the public in particular places have become obsolete in consequence of modern improvements. For example, John Wardall, in 1656, left a tenement to the Grocers' Company in London, for the purpose of making a yearly payment of 4*l*. to the churchwardens of St. Botolph's, Billingsgate, in order to provide a lantern of iron and glass, with a candle, that passengers might go with more security to and from the water-side all night long. The lantern was to be fixed at the north-east corner of the church of St. Botolph, and 20*s*. was to be paid to the sexton for taking care of the lantern. For a similar purpose John Cooke, in 1662, left 20*s*. a year for a lantern, with a candle which was to be "of eight in the pound at least," to be hung out at the corner of St. Michael's Lane, next Thames Street, from nine o'clock at night to four or five in the morning.

In the parish of Biddenham, in Bedfordshire, there

is an ancient annual payment of 5*l.* out of an estate formerly belonging to the family of Boteler, which has since become the property of Viscount Hampden. The sum is regularly paid on St. Thomas's Day to the overseers of the poor, and is applicable by the terms of the original gift, or by long-established usage, to the purchase of a *bull*, which is killed, and the flesh distributed among the poor of the parish. For many years past the annual fund being insufficient to purchase a bull, the deficiency has been made good out of the rents of land which belonged to Mrs. Elizabeth Boteler, and which she left for charitable uses to the poor of Biddenham parish. Some years ago it was proposed by the vicar that the 5*l.* a year should be laid out in buying meat, but the poor insisted on having their bull, and the usage is accordingly kept up. The price of the bull has varied of late years from 9*l.* to 14*l.* The churchwardens, overseers, and principal inhabitants assist at the distribution of the meat, the larger portions being given to those who have the largest families.

Lysons, in his 'Environs of London,' vol. iii., p. 341, speaking of some lands which were bequeathed by two maiden gentlewomen to the parish of Paddington, for the purchase of bread, cheese, and beer, to be distributed among the inhabitants on the Sunday before Christmas Day, states, that they are now let for 21*l.* per annum, and that "the bread was formerly thrown from the church-steeple to be scrambled for, and part of it is still distributed in that way."

In the township of Setmurthy, in Cumberland, the maintenance of the schoolmaster consisted chiefly of his *whittle-gait*, as it was called, which means, that he was entitled to use his knife (for forks were not then in use) at the tables of certain of the inhabitants of the parish or township. Whittle is an old English name for a knife. Chaucer, speaking of the Miller, says,

"A Sheffield thwhytle bare he in his hose."

In the north of England the word is still in use, and *whittling* is synonymous with cutting. Twenty of the inhabitants of Setmurthy, in 1723, entered into an agreement to pay certain annual sums to the schoolmaster, and to keep him a certain number of weeks each. The total amount paid to him was 36*l.*, the money payments being 36*s.* The whittle-gait, in its practical application, has long been given up, but the amount was collected by the overseers from the owners of the several tenements which were liable according to the agreement, and was paid over to the schoolmaster; but about forty years ago the overseers ceased to make the collection, and the whittle-gait, as we believe it is still called, has since been collected by the schoolmaster himself. But schoolmasters were not the only persons in the north of England who were entitled to whittle-gait. In a note in Mr. Park's copy of Bourne and Brand's 'Popular Antiquities,' it is stated that "Crossthwaite Church, in the vale of Keswick, in Cumberland, hath five chapels belonging to it. The minister's stipend is 5*l.* per annum, and *goose-grass*, or the right of commoning his geese; a *whittle-gait*, or the valuable privilege of using his knife for a week at a time at any table in the parish; and lastly, a *hardened sark*, or a shirt of coarse linen."

Another mode of remunerating schoolmasters in the north of England arose out of the brutal game of cock-fighting, which schoolmasters even in those rude parts of England have now ceased to encourage. This kind of remuneration was called *cock-penny*. In the free-school of the parish of Crossthwaite in Cumberland, all children born in the parish are admitted and educated free of expense. Cock-pennies used to be paid to the master by the boys at Shrovetide, at which time there was a cock-fight close to the school, when a great scene of confusion and riot took place. The cock-fight and the payment of the cock-penny were both abolished when the rent of the school-land increased so as to afford a sufficient remuneration to the master without such payment.

The danger of losing themselves, to which travellers were formerly exposed from the want of good roads, even in the neighbourhood of a large town like Oxford, is shown by John Cary's bequest of 10*s.* to the corporation of New Woodstock to be paid on Lady-day yearly to the clerk or sexton of the town, or such other person as should be appointed to ring at night the eight o'clock bell, for the guidance and direction of travellers; and in case they should refuse or neglect to ring the bell in manner aforesaid, then the said 10*s.* should cease to be paid to the mayor and commonalty, and should remain to the use of John Cary, his heirs, and assigns, till some person should be appointed to ring the said bell who should duly ring it.

There lived at Barnes in Surrey, one Edward Rose, who died on the 18th of December, 1652: in order to perpetuate the odour of that sweet name of Rose, after directing his body to be buried in the churchyard of Barnes, he bequeathed 5*l.* for making a frame or partition of wood in the churchyard where he had appointed his burying-place, and ordered three rose-trees or more to be set or planted about the place where he should be so interred. He then bequeathed 20*l.* to be laid out in the purchase of an acre of land for the use of the poor of the parish of Barnes; but at the same time stipulated that out of the proceeds of this acre of land, his rose-trees should be preserved, or others planted in their places, from time to time, as they should decay. The rents are laid out in purchasing bread for the poor, but Rose's rose-trees seem to have been suffered to die off.

Griffith Amerideth was anxious for the decent interment of the bodies of criminals who should be executed at Ringswell in Devonshire. Ringswell is situated near the village of Heavitree, and was the usual place of execution for criminals adjudged to suffer death for offences committed in the county of Devon or city of Exeter. Griffith Amerideth, by his will, dated January 3, 1556, directed that the profits of his lands and tenements in Sidford, Silbury, and Salcombe, being of the value of 38*s.* or thereabouts, should be received by the mayor of the city of Exeter and his successors, the profits to be bestowed for ever towards the buying of shrouds for prisoners which should suffer at Ringswell, and for the maintenance of the wall which should be made, and should compass the ground that should be hallowed there for the burial of the prisoners; and also for the maintenance of the chapel, if any should be built there.

From a feeling probably akin to that which actuated Amerideth, Robert Dowe gave 50*l.* on the 8th of May, 1705, in his lifetime, to the end that the vicar and churchwardens of St. Sepulchre's, London, should, for ever, previously to every execution at Newgate, cause a bell to be tolled, and certain words to be delivered to the prisoners ordered for execution, in the form and manner specified in the terms of his gift, as set forth in the old will-book. An annual sum of 1*l.* 6*s.* 8*d.* in respect of this gift is charged upon the parish estate in West Smithfield. It is paid to the sexton, who employs a person to go to Newgate on the night previous to every execution, where he offers to perform the prescribed duty, which, however, is always declined, as all needful services of that kind are performed within the prison.

Richard Hudson, who seems to have been the proprietor, perhaps the landlord, of the Swan Inn, Holborn Bridge, London, manifested a more cheerful disposition than the two testators just mentioned. By his

will, dated Oct. 19, 1558, he gave out of the rents of the Swan 4*l.* per annum; 3*l.* 13*s.* 4*d.* to be distributed among the poor of the parish of St. Sepulchre, London, and the remaining 6*s.* 8*d.* to be spent in "a recreation or drinking by the vicar and churchwardens," who were appointed to distribute the donation.

In the parish of Aldridge in Staffordshire a custom formerly existed for the rector, on every Christmas-day, to give to every person in his parish who would then come to his house as much bread, beef, mustard, and vinegar as he could eat. This custom has been discontinued for many years, and instead of it the rector gives six-pence to every housekeeper in Aldridge who demands it; to every housekeeper in Barr who makes a similar demand he gives eight-pence. The money so given is called "Custom-Money." The origin of the custom is unknown.

At the extremity of Stammergate in Ripon, Yorkshire, stands "The Hospital of St. Mary Magdalen," which consists of a building containing six separate apartments on one floor, for the same number of poor women, called Sisters, with a garden in front, a small field adjoining, and a chapel at a little distance, on the opposite side of the street. The members of the institution are a master, a chaplain, and six sisters. By an inquisition on the state of the hospital, taken in the tenth year of Edward II., it was found that there ought to be, according to the form of the foundation, two chaplains in the hospital to perform divine service; but during the whole time of Nicholas de Molyns, then master, the chauntry of one chaplain was withdrawn by him; that strangers, mendicant clergy, or other indigent persons happening to travel that way, ought to have a bed and provisions for one night, but at that time none had that benefit, but went away *vacuâ manu* (empty-handed); that every year, on St. Mary Magdalen's Day, *a farthing loaf* (the quarter of wheat being then worth five shillings) and a herring should be given to every poor person that came; but during the time of Nicholas de Molyns that charity was withdrawn, and in place of it he gave poor people who came on that day a saltseller (salsarium) of beans or meal, but the greater part of the poor got nothing.

USES OF THE ELM-TREE.

The English elm is characterized by Mr. Selby as a tree which "not only forms the avenues of the finest public walks and drives in the vicinity of towns and cities, and enters largely into the proportion of the trees which surround the residences and adorn the parks of our nobility and gentry, but is also the common and prevailing hedgerow timber in many districts, among which we need only to particularize the valleys of the Thames and the Severn."

The employment of the elm as an avenue-tree is perhaps scarcely to be included among its "uses," in the common acceptation of the term; but the custom is so generally prevalent as to deserve a few words of remark. The elm owes its selection for this purpose probably to its tall regular growth, the branches being subordinate to its straight continuous trunk, and to its magnitude and majestic growth. Different writers, however, such as Gilpin and Loudon, have expressed different opinions on these matters; and the rules of taste are not sufficiently defined to settle *why* such and such trees are deemed beautiful. Mr. Loudon, however, attributes the fitness of the elm for an avenue-tree to the following qualities:—Rapidity of growth, straightness of trunk, facility for topping, denseness of foliage, hardness, longevity, and requiring very little care or pruning. In treating of this tree, in No. 633, we have alluded to some of these avenues, and there seems evidence that such avenues, or at least rows of elms, were prevalent in the Anglo-Saxon times; for there are more than forty places in England mentioned in Domesday-Book, in which the word "elm" is a component part of the name, such as Barn Elms, Nine Elms, &c.

The elm-timber required for the keels of ships being of very large dimensions, we are prepared to expect that many giant trees of this kind have at times been the objects of individual description; and such is, indeed, the case. In that valuable storehouse for such information, Loudon's 'Arboretum,' as well as in other works on forest-trees, we meet with many curious details on this point. In the number already mentioned we have enumerated some examples, and shall only add here one or two more of the most remarkable. On the Brighton road stands a tree called the Crawley Elm, whose trunk measures the enormous size of sixty-one feet in circumference at the base. The trunk is hollow throughout, and has a door fastened by lock and key; but on certain festive occasions the neighbours meet and regale themselves within the tree, which will conveniently hold a dozen persons at a time. A child is even said to have been born in this tree, and the mother to have lived there for several days. Two centuries ago there was an elm at Hampstead, withinside whose trunk was a winding staircase thirty-three feet high, with a turret at the top capable of holding twenty persons. In the county of Kildare stood an elm which, till the year 1762, was deemed the finest in the world. The diameter of the head, taken from the extremities of the lower branches, exceeded thirty-four yards; but in the end of that year the two principal arms fell from the trunk in one night, apparently from their own weight, as the weather was perfectly calm. The timber contained in these branches sold for five guineas. In this situation the tree continued till the winter of 1776, when a violent storm tore up the whole by the roots, with a great mass of soil and rock adhering to them. Some time previous to this, the trunk had been carefully measured, and was found to be thirty-eight feet and a half in circumference. It had been hollow for some years.

The wood of the elm is of a brownish colour, and is hard and fine-grained. In ship-building it is used for forming the blocks and 'dead-eyes' and other wooden furniture of rigging, being particularly suitable for these purposes from its hard and adhesive nature, and indisposition to crack or split when exposed to sun or weather. The most important use of it, however, is for the keels of ships. The wood for this purpose is brought to the form of a quadrangular beam, higher than wide, and with a 'scantling,' or scale of general dimensions, depending on the size of the ship. If the length of keel is not very great, the whole is made from one piece; but if this be impracticable, two or more pieces are scarfed at the end, and strongly bolted and clinched together, being further strengthened and supported by a lower piece called the 'false-keel.'

Elm is frequently used for the naves of wheels: in London it forms the usual wood for coffins. It has been from time immemorial used for water-pipes or troughs, for conveying the water of the salt-springs to the large boxes or pans where the watery particles are evaporated by the heat of the sun or by fire, and the salt deposited. It has been surmised that the term "wych" elm, originally applied to many kinds of elm, is due to the use of elm for this purpose, as the Anglo-Saxon word *wych* implies a salt-spring (whence Droitwich, Nantwich, and other places where salt is procured). The wood of elms that have been frequently pruned becomes knotted; and such wood, when polished, is very ornamental. To obtain it the trees in France are sometimes kept topped, and headed down every three

or four years. The variety called the 'twisted elm' is also much esteemed in this respect, as are also the monstrosities, or knobs, found occasionally on all the species of elm, and which, when cut into thin slices and polished, are used largely by cabinet-makers as a veneer. A mode is described of preparing the wood of the elm for cabinet-makers, and giving it the colour of mahogany. This consists in sawing the wood into thin planks, and then boiling it for an hour or more, till all the sap is extracted. The planks are afterwards wiped dry with coarse cloths, and laid in piles alternately with layers of deal laths placed across the boards at regular distances; about ten or twelve boards being thus placed one upon another, and a heavy weight being placed on the topmost. In this way the boards dry without warping, and are afterwards washed in aquafortis, when they are ready for the dye. This dye consists of two drachms of powdered dragon's-blood, one drachm of powdered alkanet-root, and half a drachm of aloes; these ingredients being steeped in half a pint of spirits of wine. The tincture is applied with a sponge two or three times, according to the depth of colour required; and the wood, thus dyed, is prepared for the usual process of polishing.

As fuel the wood of the elm is rather inferior to that of beech; as it is likewise in respect to charcoal. The ashes of the elm are rich in alkali; this tree occupying, in this respect, the tenth place in a list of seventy-three trees. The leaves and young shoots were used by the Romans to feed cattle, and they are still so employed in many parts of France. They have in some places been given to silkworms; and in both France and Norway they are boiled to serve as food for pigs. In some parts of Russia the leaves are said to to be used as tea. The bark is sometimes applied as an astringent medicine; and the inner bark, like that of the lime, is employed for making nets and ropes. Both the outer and inner bark and the leaves are said to yield a substance which serves for glue. Young deer are very fond of the bark; and in Norway it is kiln-dried and ground with corn to make flour for bread.

Most of the above details relate to the common or English elm. A few words may now be said concerning the Scotch or mountain elm, called also the "wych" elm.

The Scotch elm has not so upright a stem as the English, and it soon divides into long, widely-spreading, somewhat drooping branches, forming a large spreading tree. Gerard says that from the leaves somewhat resembling those of the hazel, the Hampshire people were in his time accustomed to call the wych or Scotch elm "witch-hasell;" and he adds, "Old men affirm that when long-bows were in use, there were very many made of the wood of this tree; for which purpose it is mentioned in the English statutes by this name of witch-hasell." The timber of this kind of elm has been long considered, in Scotland and Ireland, as next in value to that of the oak, and it has accordingly been extensively introduced into artificial plantations.

In the time of Gerard the wood of the wych or Scotch elm was not only made into bows, but its bark, which is so tough that it will strip or peel off from the wood from one end of a bough to the other without breaking, was made into ropes. The wood was not considered so good for naves as the wood of the common elm, which then, as now, was considered superior in toughness and in strength, though the former cleaves better. Scotch elm timber is extensively used by the ship-builder, the boat-builder, the block and pump-maker, the cartwright, the cabinet-maker, and the coachmaker. The tree when grown up has generally a slight bending in the stem, which renders it very fitting for floor-timbers of vessels. A contributor to the 'Gardener's Magazine' states that this timber "is good for the naves, poles, and shafts of gigs and other carriages; and from its not splintering, as the oak and ash do in time of battle, for swingle-trees of great gun-carriages. It is also used for dyers' and printers' rollers, the wood by constant use wearing smooth. Cartwrights employ it for shafts, naves, beds, rails, and standards for wheelbarrows; and the handles of spades, forks, and other agricultural implements."

If we were disposed to term a superstitious employment of the Scotch elm one of its "uses," then there is a curious example of such a use occasionally exhibited. In many parts of the country the wych-elm, or 'witch-hazel,' as it is still often called, is considered a preservative against witches; probably from the coincidence between the words wych and witch; and in some of the midland counties, even to the present day, a little cavity is made in the churn, to receive a small portion of witch-hazel, without which the dairy-maids imagine that they would not be able to obtain butter.

There is a species called the American elm, of which the bark is said to be easily detached during eight months of the year; and when so detached, it is soaked in water, rendered supple by pounding, and employed in the northern states of America in the form of shreds or ribands, for weaving into seats for common chairs, as rushes are in England. Another American kind, called the Red elm, yields leaves and branch-bark, which when macerated in water give a thick and abundant mucilage, used as a refreshing drink for colds and for emollient plasters.

The Pasturage of Bees.—Next to the situation of the bee-hive is the consideration of the bees' pasturage. When there is plenty of the white Dutch clover, sometimes called honeysuckle, it is sure to be a good honey year. The red clover is too deep for the proboscis of the common bee, and is therefore not so useful to them as is generally thought. Many lists have been made of bee-flowers, and of such as should be planted round the apiary. Mignionette, and borage and rosemary, and bugloss, and lavender, the crocus for the early spring, and the ivy flowers for the late autumn, might help to furnish a very pretty bee-garden; and the lime and liquid umber, the horse-chestnut, and the sallow, would be the best trees to plant around. Dr. Bevan makes a very good suggestion, that lemon-thyme should be used as an edging for garden-walks and flower-beds, instead of box, thrift, or daisies. That any material good, however, can be done to a large colony by the few plants that, under the most favourable circumstances, can be sown around a bee-house, is, of course, out of the question. The bee is too much of a roamer to take pleasure in trim gardens. It is the wild tracts of heath and furze, the broad acres of bean-fields and buck-wheat, the lime avenues, the hedgerow flowers, and the clover meadows that furnish his haunts and fill his cell. Still it may be useful for the young and weak bees to have food as near as possible to their home; and to those who wish to watch their habits, a plot of bee-flowers is indispensable.—*Quarterly Review.*

The Kiwi.—A bird of such anomalous structure as the Kiwi, differing as it does from all other birds, although most nearly related to the Struthious order, and having habits peculiar to itself, had attracted my most eager attention. It is now rapidly becoming extinct. If it be true that, as the natives assert, the kiwi is found on Little Barrier Island, which is uninhabited, and is situated about nine miles from the main—this fact would give rise to curious geological speculations. How did a bird which cannot fly—for its wings, so to speak, are nothing but small crooked appendages, each about an inch and a half long, and terminating in a claw—come across the sea to that island? It would appear that no other answer can be given than that the island was formerly connected with the main. The kiwi, or kiwi-kiwi, as it is called by the natives, inhabits the deepest recesses of the forest. Here, where gigantic trees are interwoven

almost impenetrably with climbers, and where in the indentations of the mountains are formed small open and swampy spots, covered by bulrushes and tufts of a high carex, or a lilinaceous plant, the Hamelinia veratroides, is its favourite resort. Here it hides itself in the hollows of trees during the day, being a truly nocturnal bird. It generally lives in pairs, male and female, one pair occupying a certain district. As soon as night sets in, it leaves these hiding-places in search of food: this consists of the larvæ of coleopterous and lepidopterous insects, which it scratches out with its powerful feet, or turns up with its long slender beak. But insects seem not to be its only food, as seeds have been found in its stomach. Little is known as to the nidification and incubation of the kiwi; but I have ascertained the following particulars from the natives:—They say that it burrows with its feet, and hollows out to a greater extent excavations already existing under the roots of trees; and in them, on a single layer of grass, it lays one egg of a greenish colour, and as large as a turkey's egg. They also assert that the male and the female hatch alternately. Their notion as to the period of incubation is rather curious, as they say that the birds sit for several months upon the egg. During the night, the shrill cry of the kiwi is often heard; the male utters the sound *koire, koire, koire;* the females, *ko, ko, ko.* By imitating these notes, the natives decoy the kiwi, and catch them with the help of a dog, or bewilder them by suddenly displaying a torch made of the resinous hauri-pine, by which plan they catch them alive. A violent struggle generally ensues between the dog and the bird, in which the kiwi uses its powerful legs with great effect. It is said to be very swift in running, although its feet do not seem better adapted for that purpose than that of the common fowl. Formerly, the kiwi served the natives for food; it is very fat at some seasons, and its flesh is said to be well-tasted; its skin, which is remarkably strong and tough, especially along the back, was sewn together, and formed highly valued mats. Never having seen one of these mats, I readily concluded that the bird itself had become very scarce. I possess, however, fish-hooks, to which the feathers of the kiwi are attached as artificial flies; and to that purpose they are well adapted.—*Dieffenbach's Travels in New Zealand.*

Bees in Surinam.—On the 16th I was visited by a neighbouring gentleman, whom I conducted up my ladder; but he had no sooner entered my aërial dwelling than he leaped down from the top to the ground, roaring like a madman with agony and pain, after which he instantly plunged his head into the river; but, looking up, I soon discovered the cause of his distress to be an immense nest of wild bees, or *Wasive Wassen*, in the thatch immediately above my head, as I stood within my door, when I immediately took to my heels, as he had done, and ordered them to be destroyed by my slaves without delay. A tar-mop was now brought, and the devastation just going to commence, when an old negro stepped up and offered to receive any punishment I should decree, if even one of these bees should sting me in person. "Massa," said he, "they would have stung you long ere now had you been a stranger to them; but they, being your tenants, that is, gradually allowed to build upon your premises, they assuredly know you and yours, and will never hurt either you or them." I instantly assented to the proposition, and tying the old man to a tree, ordered my boy Quaco to ascend the ladder quite naked, which he did, and was not stung. I then ventured to follow; and declare, upon my honour, that even after shaking the nest, which made the inhabitants buzz about my ears, not a single one attempted to sting me. I next released the old negro, and rewarded him with a gallon of rum and four shillings for the discovery. The swarm of bees I since kept unhurt, as my body guard, and they have made my overseers take a desperate leap for my amusement, as I generally sent them up my ladder on some frivolous message, when I wished to punish them for injustice and cruelty, which was not seldom.—*Colton's Bee-Book.*

Commerce among the Ancient Romans.—I know of only one fact which seems to indicate the existence of a commercial spirit amongst the Romans at the period with which we are now engaged (the third century A.C.). The commercial spirit of the Romans had no time to develop itself; the invasion of Hannibal was fatal to the security, and much more to the acquisition, of capital; and after the struggle was over, society had undergone a change, which fixed the attention of the people on other objects. Trade therefore contributed but little to the greatness of Rome; indeed, it is ridiculous to speak of the trade of a country where some of the simplest callings were as yet unknown, and where silver money had been coined for the first time only five years before the first Punic war. Were the manners of Rome then as pure as those writers would imagine, who consider an agricultural people to be placed in so much healthier a moral condition than a commercial or manufacturing one? Undoubtedly the Roman character, before the second Punic war, was full of nobleness; but it is idle to connect its excellence with the preference given to agriculture, rather than to trade. The Roman people were as yet in the youth of their existence; and their minds enjoyed a youthful freshness. They had not lost the feelings of admiration and veneration; feelings which knowledge and experience, inasmuch as their field is an evil world, surely lessen; feelings whose destruction is the worst degradation of human nature.—*Arnold's Rome,* vol. iii.

New Zealand Superstitions.—Man, according to the notions of the natives, is endowed with an immortal, incorporeal spirit, which at his death departs from the body, and goes as a falling star to the nether world, the entrance to which is down the face of a rocky cliff at the Cape Maria van Diemen. An ancient tree stands there, upon the branches of which the spirit descends. The natives hold this place in great awe and veneration; and even Christian natives who accompanied me would not go near it. But the spell has been partially broken by a missionary cutting off the branch of the tree on which the spirit was supposed to alight. In the interior the natives still adhere to their ancient notions. The lower world is the common dwelling-place of spirits, but it is not the only one. Before the spirit of an hereditary chief descends into it, it goes into Heaven; there his left eye remains, and becomes a star. In the lower world the spirits live as men do on earth; but they cannot leave it, and influence the actions and the fate of those who are alive, communicating with them through the medium of the priest, who hears them. Their voice has a whistling sound, which others besides the priests sometimes perceive, when they walk out in the dark. If travellers come into the neighbourhood of the infernal regions, they throw down a piece of fern or of the alikawpalm, to let the spirits know whether the wanderers are inhabitants of the open land or of forest. The spirits often speak in dreams to the priest or chief, who announces their communications in the moons; and these often lead to important resolutions. The belief in dreams is universal, and the commands given in that way are implicitly obeyed, and often influence their most important actions.—*Dieffenbach's Travels in New Zealand.*

A Christian Community.—The St. Kilda community may in many respects be regarded as a small republic, in which the individual members share most of their worldly goods in common; and, with the exception of the minister, no one seems to differ from his neighbour in rank, fortune, or condition. Indeed a peculiar jealousy is alleged to exist on this head, no man being encouraged to go in advance of those about him in anything, which of course must be a drawback on improvement. However, many kind and Christian features are engrafted on the system, such as widows and orphans, or others unable to maintain themselves, being supported by the community, in equal proportions. They are frequently very ill off during stormy weather, or those periods of the year in which the rocks are deserted by their winged inhabitants. Their slight supply of oats and barley would scarcely suffice for the sustenance of life; and, such is the injurious effect of the spray in winter, even on their hardiest vegetation, that savoys and German (or curly) greens, which with us are improved by the winter's cold, almost invariably perish soon after the close of the autumn. This, however, is not owing to the rigour of the climate, but to the saltness of the spray which the boisterous winds of winter carry up from the turmoil of the raging shores, and spread upon the surrounding vegetation. This the minister has endeavoured to prevent by having recently raised a stone dyke of ten feet high around a small enclosure in which his cabbages lie ensconced. In other respects, in truth, the climate is extremely mild, the ice which is formed, even during the coldest night in winter, being scarcely thicker than a penny, and usually melting away, if the sun is at all visible, in the course of the ensuing day.—*Wilson's Voyage round the Coasts of Scotland.*